# AN EXPLORATORY STUDY FACTOR INFLUENCING APPLICATION SERVICES PROVIDER (ASP) SUCCESS

PAH SOCK HON

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## ABSTRAK (MALAY)

Penyedia perkhidmatan aplikasi menjadi satu perkhidmatan sewa baru yang berpangkalan perniagaan perusahaan. Penyedia perkhidmatan aplikasi berpotensi untuk mengubah pengguna gaya hidup dan juga membantu untuk mengubah dan membantu perusahaan untuk mewujudkan kelebihan kompetitif. Malangnya, Syarikat ASP tetap gagal bagi mengekalkan dan menambahkan pelanggan mereka. Ini dipergaruhi oleh syarikat ASP mengabaikan faktor penggunaan berterusan di ASP yang merupakan faktor penting bagi mengekalkan dan menambahkan pelanggan mereka. Oleh itu, kajian ini dijalankan untuk mejelaskan faktor kejayaan utama bagi ASP dengan menggunakan model kejayaan system maklumat sebagai teras asas bagi kajian ini. Sebagaimana, borang soal selidik dijalankan melalui laman web dan terdapat seratus dan dua puluh keputusan kutip dari orang ramai telah digunakan bagi kajian. Selain daripada itu, SPSS perisian telah digunakan untuk menganalisis data awalan yang dikutip dari orang ramai dan enam faktor seperti mutu sistem, kualiti maklumat, kualiti perkhidmatan, kepuasan pengguna, nilai penghargaan dan penggunaan berterusan telah digunakan sebagai faktor untuk menentukan berjaya ASPs. Daripada keputusan, mutu sistem dan kualiti perkhidmatan adalah faktor yang penting bagi mempergaruhi faktor nilai penghargaan dan penggunaan berterusan dalam ASP.

## ABSTRACT

Application service provider (ASP) becomes a new rental-based enterprise software business. ASP is potential to change the user lifestyle and also help ASP vendor to create competitive advantages. Unfortunately, ASPs still fail to persuade and get attention from their customer and this cause by ASP vendor less focus on the factor influencing the continuous usage in ASP. Therefore, this research attempts to explore the main success factors for ASP base on the McLean and DeLone IS success models. One hundred and twenty samples were collected from respondents through online free survey website. Beside that, SPSS has been used to analysis the primary data that collected from respondents and six variables, system quality, information quality, service quality, user satisfaction, perceived value and continuous usage have been used to determine the success of ASPs. From the results, system quality and service quality are significant for fostering perceived value and continuous usage in the ASP.

# Chapter 1

# INTRODUCTION

## 1.1. Introduction

With the high competitive business market, businesses today require to transform themselves into-e-business technologies which heavily investing in the company business like Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Customer Relationship Management (CRM) and so on. Hence, application service provider (ASP), a new rental-based enterprise software business, has become a viable option.

The phenomenal growth of the Internet has persuaded many companies of its potential as a channel for outsourcing information systems applications. Application service providers (ASP) are firms that offer outsourcing application services to many organizations via the Internet. Currently, there are more than 1000 companies provide ASP-type services to different industry of business (Qingxiong Ma et al., 2004).

McAfee is one of the several software companies which began to supply its products to their client over the internet by using the ASP rental concepts. Other companies like Microsoft, Oracle and SAP also look into this model of the business. Beside that, McAfee start to work with Think Free to offer customer office applications like word processing, spreadsheet and presentation applications whereby users able to use those applications anywhere by accessing to McAfee website (Grovers, 2001).

By providing the web based services, ASP vendors able reduce the effort, cost and time in order to provide the service to their customer. On the other hand, customer not needs to worry about whether the ASP application able to run in different operating system and this will help the user to complete their task without go out from home.

However, although ASP has the potential to fundamentally change the manner in which IT services are provided for user firms, current ASPs often fail to show robust records in accumulating and maintaining customers. Therefore, this study attempts to explore the main success factors for ASP-based information systems on the basis of past IS success models.

## 1.2. Background

ASP is the extension of the IT outsourcing. IT outsourcing shares many features with ASP model but ASP remained unique. ASP and IT outsourcing both concern about vendor selection, such as service, information and system quality and required standardized and non-critical applications that client's requested in order to help customer perform their job (Qingxiong Ma et al., 2005).

Both outsourcing and ASP are required to maintain the good relationship between vendor and client because a strong relationship between vendor and client is able to increase the flexibility and effectiveness of delivering the ASP service to customer.

Nowadays, most of the companies prefer to use the ASP model rather than outsourcing their service because this will help the company to cut down the complexities and the cost of the software. Table 1.1 provides a comparison between conventional IT/IS outsourcing and the ASP model.

Table 1-1

*A comparison of traditional IT/IS outsourcing and ASP model*

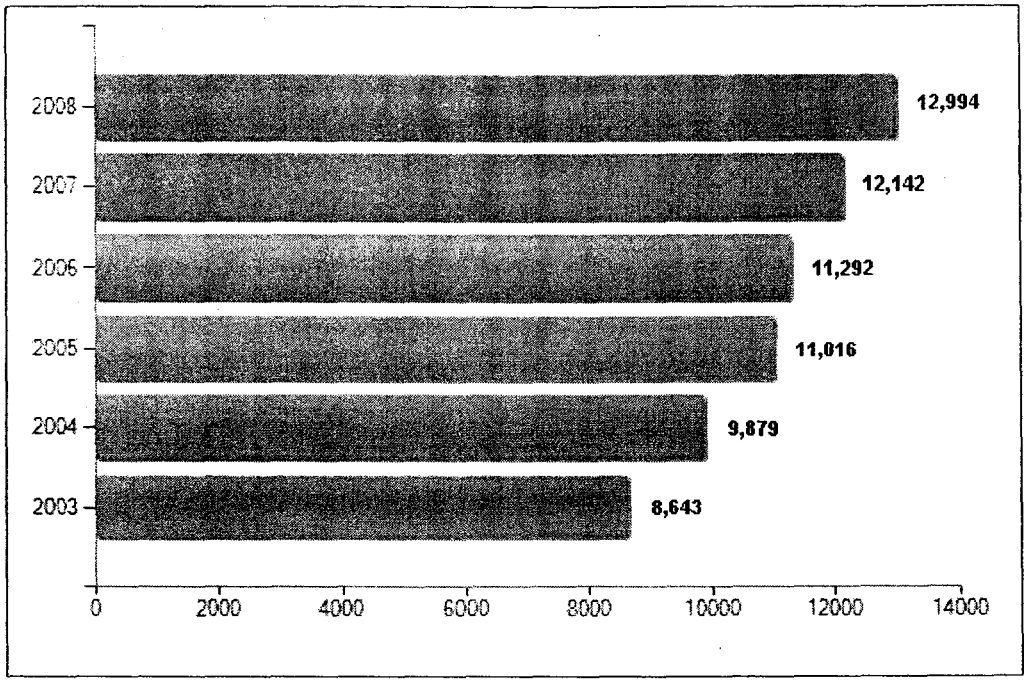
| | **Aspects** | **Traditional IS outsourcing model** | **ASP model** |
|---|---|---|---|
| **Similarities** | Client expectation | The quality and availability of support staff, the ability of the vendor to grow, indication of some vendor competence, and tangible evidence of success | |
| | Applications | Standard, non-critical applications | |
| | Contract | Service level was specified in a contract to govern the services that providers rendered. | |
| | Client-relationship | Maintain a good relationship with clients | |
| **Differences** | Target markets | Large clients with IT departments | SMEs with low IT expertise |
| | Vendor characteristics | "Name" vendors, with potential global span | Entrepreneurs and start-ups |
| | Contract types | Long, broad, strategic | Short, standard, usage-based, and non-strategic |

| | Aspects | Traditional IS outsourcing model | ASP model |
|---|---|---|---|
| | Available functions | Pick your services from application development to infrastructure operation | Web-based application services |
| | Product customization | Tailored or client-determined | Standard packages with one site fits all |
| | Resource ownership | Mixed bag | Vendor server hardware and application ownership |

(Source: Qingxiong Ma et al., 2005)

Recently, ASP began to receive attention because potential grow of the ASP in the business market area and many MNC company interest to expand their business based on the ASP model. ASP market expected to grow from US$ 300 million in 1999 to US$ 25 billion in 2004 (Miley, 2000; Sofiane Tebboune, 2003).

According to data from Global Market Information Databases (GMID), number of internet users has been increased significantly from year 2003 to 2008. This figure shown that number of people who explore the Internet world is increased and this indicates that more people have experiences with access the ASP services.




(Source: GMID - Internet users: International Telecommunications Union /World Bank /Trade Sources /Euromonitor International)

*Figure 1:1.* Chart for number of internet users.

Table 1-2 was shown the number of personal computer (PCs) in use from year 2003 to 2008 in Malaysia by referring to Global Market Information Databases (GMID).

Table 1-2

Statistic for personal computers (PCs) in use in Malaysia

| Year | Personal Computers (PCs) in use |
|---|---|
| 2003 | 4,485.90 |
| 2004 | 5,377.70 |
| 2005 | 6,269.90 |
| 2006 | 7,118.20 |
| 2007 | 7,888.30 |
| 2008 | 8,561.9 |

(Source: Personal Computers (PCs) in use: Euromonitor International from International Telecommunication Union/national statistics)

The steady growth of internet users and personal computers (PCs) in Malaysia will cause the emergence of the need of the ASPs. Although the price of the software and hardware increasing rapidly, but end users still need it for daily business operation and personal usage. This shown that ASP is important to deliver service through the Internet and coordinate with software vendors, network providers and hosting services.

## 1.3. Problem Statement

Through traditional business model, ASP companies need to have a capital budget for operating activities, IT hardware and software and manpower. But, by using ASP model able to help ASP companies to provide their service to customer in shorten time in order to gain the business competitive advantages. Even though ASP has been wide spread in last few years, but ASP vendors still facing with same problem whereby failed to identify the user requirement.

There are many challenges that ASP vendors should be overcame in order to retain their market position. In this competitive market, customer is the main focus point to determine the success of the ASP. Therefore, user's perceived value and user satisfaction have been used as the factors to predicate the success of ASP.

Previously, DeLone and McLean (D&M) (2003) focus on how user satisfaction influences user intention to re-use the system. But, the most important thing for most of companies is how to retain their customer and sustainable in competitive market. In order to understand the user behavior on continuous usage the

service, this study was focused on how user satisfaction influencing user behavior in continuous usage of ASP.

Other than that, this research also focuses on the relationship between the perceived value and continuous usage of the ASP. This factor is important to understand user perception on the ASP and in order to influence the continuous usage of the ASP.

## 1.4. Research Objectives

The objective of this research is looking for the relation between ASP success factors from user's perspective. This research focused on how quality measures like system quality, information quality and service quality that influence on perceived value and user satisfaction on ASP services in Malaysia.

Besides, this study will also investigate the perceived value variable to influence the relationship between independent variables, intervening variable and dependent variable. This study will also help to understand the user's assessment in selecting the ASP services which directly influencing the user satisfaction on the ASP.

Adoption of ASP will be involved 2 parties which are vendor and client. Since there are some relationships between the vendor and client on the ASP, a study on the user satisfaction has been used to determine the success of the ASP. This study aimed to achieve the following objectives:

1. To study the relationship between system quality, service quality and information quality on user satisfactory and perceived value in using ASP.
2. To study the relationship between perceived value and user satisfaction in using ASP.
3. To study the relationship between perceived value and user satisfaction toward continuous usage of ASP.

## 1.5. Research Questions

Research questions are the queries that users need to be investigated to complete the research. Based on the research objective, there are several questions that will be concerned in this research, such as:

1. What are the factors influencing the user satisfaction and perceived value of ASP?
2. Do the perceived value and user satisfaction induce the user's continuous usage of the ASP service?

## 1.6. Definition of Key Terms

The definitions of key terms have been used for the research are listed in table 1.3:

Table 1-3

*Definition of Key Terms*

| Key Terms | Definition |
|---|---|
| **System Quality** | The performance of information system itself (Heeseok Lee et al., 2007). |
| **Information Quality** | The quality of the information that the system produces (Heeseok Lee et al., 2007). |
| **Service Quality** | An intangible attributes that depend on user's perception on the overall service provider's performance (Gyeung-Min Kim, 2008). |
| **Perceived Value** | Frequently conceptualized as involving a consumer's assessment of the ratio of perceived quality and perceived sacrifice" (Zeithami, 1988). |
| **User Satisfaction** | An affective state that is the emotional reaction to product or service experience is influenced by a consumer's satisfaction with the product itself and with the information used in choosing the product (Spreng, Mackenzie & Olsharsky, 1996). |
| **Continuous Usage** | Intension of the client to extending purchase or use the vendor's service or product (Heeseok Lee et al., 2007) |

## 1.7. Significance of the Study

The significance of this study is to help the organization to understand the market requirements and improve the weakness of the company to stay ahead of the competition in the situation who thrive in the global climate of change.

For existing ASP vendors, this research is to investigate the system quality, information quality and service quality as factors influencing user satisfaction and perceived value towards ASP success. These can be used as the guidelines for ASP

vendors to create the uniquess of their business and self-checking on the potential improvement area for their company.

Besides, five variables that used in this research can be an essential bussiness strategy for any up and coming ASP organizations and directly impact the lifetime of the organization. For new organization, this is important to consider those factors in order to gain the competitive advantages.

## 1.8. Organization of Remaining Chapters

This study is organized into five chapters. The first chapter is all about the introduction, background and emergency of ASP. In addition, the problem statement and objectives of the research help to guide researcher to look for the solution. It outlines the research questions, defines the key terms and highlights the significance of the study also important as ideas on what area the overall research should be carried out.

The second chapter reviews literature of previous studies on system quality, service quality and information quality which are the important factors that influencing the perceived value and user satisfaction on ASP and by result will affect on continuous usage of ASP. Theoretical framework and hypotheses have been constructed based on the literature review at the end of the chapter.

The third chapter discussed the research methodology in this research that cover research design, variables, sample, procedure, measures, data analyses and

summary. This chapter defined the methodology has been used for the research because unsuitable methods will cause objective of the research cannot be fulfilled.

The fourth chapter discussed and presented the profile of respondents, goodness of measures, descriptive analyses, hypotheses testing summary of the results. This chapter has been used to analyze and interpret the output of the data that has been collected from the respondents.

For the final chapter, the overall conclusion of the research has been summarized for the recapitulation of the study findings, discussions, implications from this study, limitations in this study and suggestion for future research. This chapter concluded the results of the finding and this can be used as guideline or recommendation for the ASP vendors.

# Chapter 2

# LITERATURE REVIEW

## 2.1. Introduction

Recently, people had been more focus on the availability of ASP, which is the alternative for in-house information systems that help company to cut the cost. ASP vendor offered ASP in a package which consists of all related services like enterprise systems, telecommunication services, hardware configuration, storage services and maintenance service. They will implement all these over Internet.

In the ASP model, it combines several services like development, management and support based on the nature of ASP usage (Desai et al., 2003). There are different types of ASP provided based on their features that required by client, such as pure play, ASP enablers, partnerships, enterprise and horizontal. The table below is shown the main features of each type of ASPs.

Table 2-1

*Types of ASPs*

| Name (Type) | Main Features |
|---|---|
| Pure Play | This type of ASP licenses software from a variety of vendors |
| ASP enablers | Use the best-of-breed service providers |
| Partnerships | Access a large community of prospective clients that share the same interest. |
| Enterprise | They target medium sized companies either through their own channels or through another ASP. |
| Horizontal | These type of ASPs are aimed at all markets and offer collaboration tools like groupware |

(Sources: Desai et al., 2003)

According to Groves (2001), an Application Service Provider (ASP) is the central computer systems like hosts, Unix systems, etc. using by the company as the renting software. The function of ASP provides customer the remote access to the software applications whereby the customer actually access to ASP application. With this, it is able to run and download desire results instead of downloading these applications.

"ASP as a single point of contact for all the telecommunications, hardware, software, and consulting necessary to deploy, run, and maintain hosted applications remotely" as defined by Smith et al., 2003. ASPs offered products such as Enterprise Resource Planning (ERP) system which available through networks in late of 1990.

In Qingxiong Ma et al. (2005) research, he explained ASP as "any third party organization whose main business is providing software-based services to

customers over a wide area network in return for payment" (Peterson et al, 2003). Those services that provided by the ASP vendors included enterprise (CRM and ERP), vertical (industry-specific) and horizontal (functionally focused) applications (Seltsikas et al., 2002; Qingxiong Ma et al., 2005). On the other hand, other services activities, such as application upgrades, data security, technical support, virus protection, consulting, integration and staff training also included in the ASP package as well (Lepeak, 2001; Qingxiong Ma et al., 2005).

Ekanayaka et al. (2003) have a different definition on ASP which saying that application service providers (ASPs) are "third-party service firms that deploy, manage and remotely host software applications through centrally located services in a rental or lease agreement". According to the ASP Industry Consortium, "An ASP manages and delivers application capabilities to multiple entities from datacenters across a wide area network (WAN)".

By referred to Donahue (1999), Desai et al. (2003) defined "an ASP renders software as a service, providing applications and the IT infrastructure a support services to customers on a subscription basis, and bears the responsibility for efficient provision on these software."

As a result, the types of ASPs are complex and no one definition fits for all of them. ASPs deliver services through the Internet and coordinate with network providers, hosting services, software vendors, and consultants.

## 2.2. Review of the literature

Outsourcing has recently become a viable option that impact on business decision and cause emergence of ASP. There are a lot of the researches were reviewed on the subject of DeLone and McLean IS Model to identity the relationship between user and quality dimensions. Besides, there are several researches were adopted D&M model in their studies and additional variables have been added to redefine the relationship between user and quality (Pitt et al., 1995; Myers et al., 1997; Seddon, 1997; DeLone and McLean, 2003; Rai et al., 2002).

### 2.2.1 DeLone and McLean IS Model

According to previous studies, DeLone and McLean (D&M) (1992) model has been used to investigate the success of information system by using six major dimensions like system quality, information quality, individual impact, use, organizational impact and user satisfaction (Heeseok Lee et al., 2007).

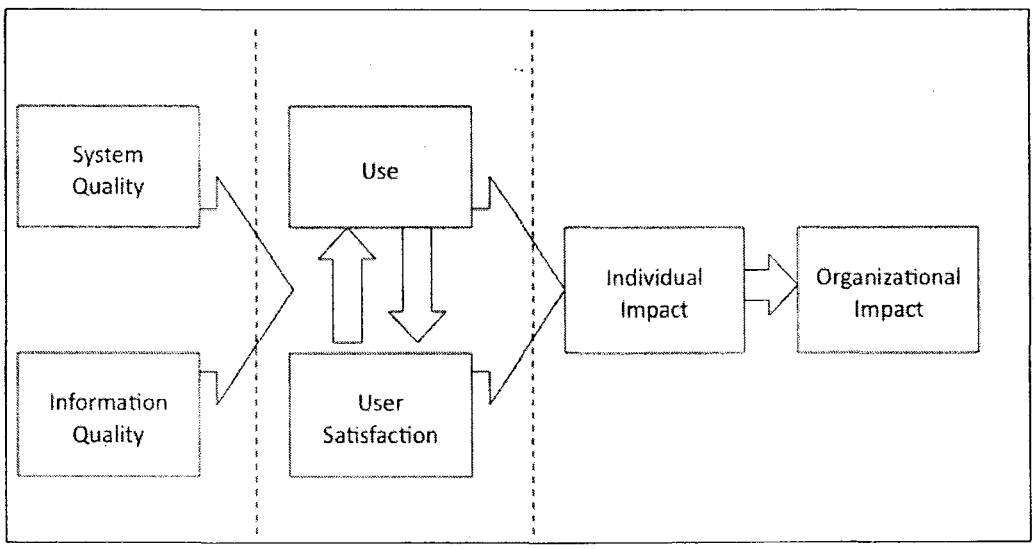



*Figure 2:1.* DeLone and McLean IS Success Model, 1992.

Service quality has been added into the D&M model by Pitt et al. (1995) in his research where service quality as a key determinant for user satisfaction on ASP (Heeseok Lee et al., 2007). DeLone and Mclean (2003) proposed an update of D&M IS success model by adding two variables service quality and intention to use in order to evaluate the impact on the success of IS, especially for merging of ASP. By adding in the service quality in D&M model, this will provide a significant contribution on the success of the Information System (Kettinger et al., 1995; DeLone and McLean, 2003).

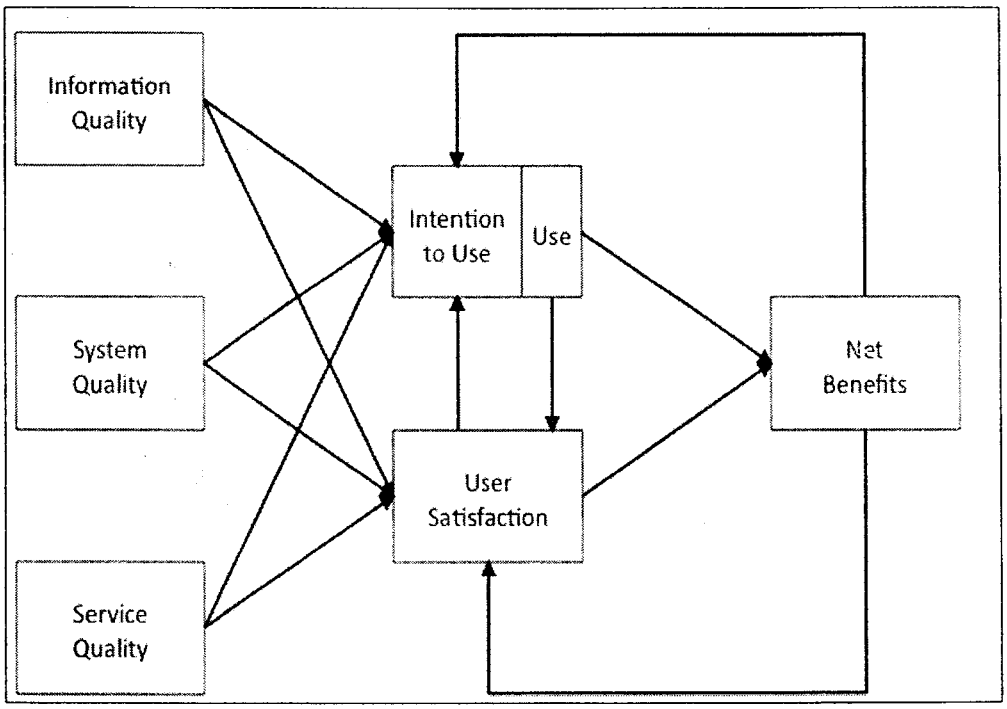



*Figure 2:2.* DeLone and McLean Update IS Success Model 2002, 2003.

Based on DeLone and McLean's (1992) model, Seddon (1997) proposed an alternative model by combining both processes and causal explanations to evaluate the interrelationships among the taxonomic categories in order to separate the variance model of behavior which will impact the result of IS success. From

Seddon's point of view, the use variables in the IS model is a behavior which not suitable to become a success measurement compare with the perceived usefulness. To make Seddon's IS success model includes the general perceptual measures of net benefits of IS use by using the perceived usefulness and user satisfaction variables.

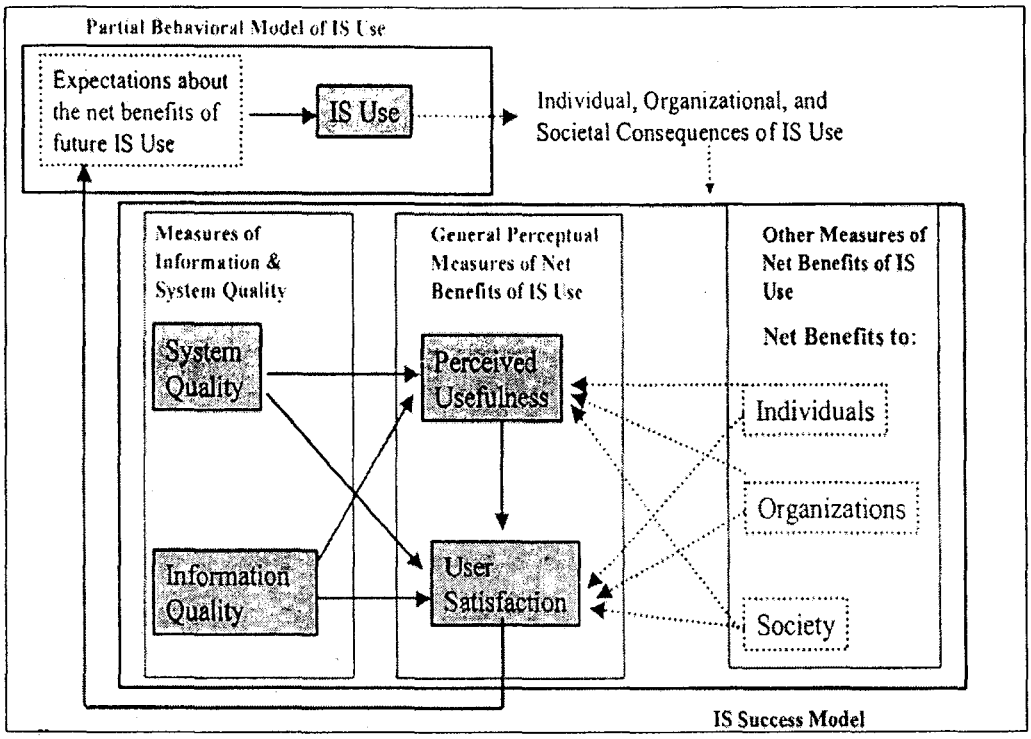



*Figure 2:3.* Seddon Model, 1997.

Myers et al. (1997) extended the D&M model by adding workgroups impact and organizational size as contingency variables to investigate the impact of both variables to influences the IS success (Heeseok Lee et al., 2007). Rai et al. (2002) found that acceptance fits and by combining both D&M and Seddon models in the research to investigate the validity of IS success because most coefficient are significant through the empirical validation.

Table 2-2

Prior literature on IS Success

| Study | Research Method | Research Variables | Key Findings |
|---|---|---|---|
| **DeLone and McLean (1992)** | Conceptual | System quality, information quality, use, user satisfaction, individual impact, organizational impact | Categorizes IS success variables of past research and proposes an integrated IS success model. |
| **Pitt et al, (1995)** | Empirical | D&M model, service quality | The D&M model is extended by adding service quality |
| **Myers et al. (1997)** | Conceptual | D&M model, service quality, workgroup impact, contingency variables. | An extended IS success with external contingency variables is suggested. |
| **Seddon (1997)** | Conceptual | System quality, information quality, perceived usefulness, user satisfaction, individual benefit, organizational benefit, social benefit | The causal relationships of the D&M model are redefined; perceived usefulness is suggested instead of use. |
| **DeLone and McLean (2003)** | Conceptual | D&M model, service quality, intention to use | Incorporates service quality into the D&M model and reexamines its causal relationships. |

| | | | |
|---|---|---|---|
| **Rai et al. (2002)** | Empirical | Information quality, system dependence, ease of use, perceived usefulness, user satisfaction | Both D&M and Seddon models show acceptable fits. |

(Source: Heeseok Lee et al., 2007)

2.2.2 System Quality

System quality means "the performance of the information system itself" (Heeseok Lee et al., 2007). System quality included both system hardware and software like databases, network, and application programs (Gyeung-Min Kim et al., 2008). System quality consists of response time, availability and accessibility.

The dimensions that used for evaluating the system quality consist of response time, reliability, availability, accessibility, flexibility, system security and etc. Response time means that the amount of time that used by ASP vendor in order to respond to user's request (Heeseok Lee et al., 2007). The acceptable response time will not be the same for different users based on individual perspective.

System availability is the degree of usability for a system when user needs it. System accessibility is the degree of usability for system and information in the ASP with a low effort to get it (Heeseok Lee et al., 2007; Gyeung-Min Kim et al., 2008). Accessibility of the ASP can be accessed in term of the high bandwidth and high speed data network where directly affect users' view on the ASP.

System quality is the important point for client to choose the ASP vendor because system's performance is meeting user's expectation will tend to feel satisfied

with the overall information system (Rai et al., 2002; McGill et al., 2003; Almutairi & Subramaniam, 2005; Iivari, 2005). Clients would not intend to subscribe a service if the application consists of a lot of bugs and this will delay the daily business process.

### 2.2.3 Information Quality

Information quality means the quality of information that ASP provided by ASP to meet the user needs and requirements (Heeseok Lee et al., 2007). Bailey and Pearson (1983) and Wixom and Todd (2005) suggested and adopted information accuracy, format, currency and completeness to measure ASP performance in the IT fields.

Accuracy is the ability of a measurement to match the actual value of the quantity being measured (Bailey et. al., 1983). The data that kept at the vendor server will be considered meeting accuracy criteria if it is exactly same with the information have been entered by the user into the system. Completeness is the information which can be gathered from the system and having everything needed by the user (Wixom et al., 2005). If the data kept in the system unable to fulfill the user needs, this means the system is not capable to fulfill the user requirements.

Information quality is an important key to help user to identify the correctness of the data in order to verify the capabilities of the vendor. If ASP able to deliver the contents which are meeting the user needs and requirements, it will improve the user intention to use the system. Of course, it will definitely help user to

continue to use the system and increase the frequency (DeLone and McLean, 1992; Seddon, 1997; Rai et al., 2002).

### 2.2.4 Service Quality

Service quality is an intangible attribute that depends on user's perception on the overall service provider's performance (Myers et al., 1997; Gyeung-Min Kim, 2008). Before DeLone and McLean (2003) proposing the updated IS success model, Pitt et al. (1995) and Myers et al. (1997) had extended the service quality in conventional DeLone and McLean (1992) IS success model.

The original service quality which constructed by Parasuraman et al. (1991) measures service quality as the discrepancy between what the user expected to be offered from ASP service and what is actually provided by ASP to user (Heeseok Lee et al., 2007). There are four dimensions to measure the service quality like reliability, responsiveness, assurance and empathy.

Reliability means the ability of ASP vendor to perform the promised service dependably and accurately. To measure the reliability of the ASPs, the quality and delivery time of service must be considered (Kettinger and Lee, 1994; Heeseok Lee et al., 2007). The service which intends to help client to solve their problem must be delivered as per the promised time. Responsiveness is the willingness of ASP to help customers and to provide prompts service if user encountered an issue or problem when accessed the system (Kettinger and Lee, 1994; Heeseok Lee et al., 2007; Gyeung-Min Kim, 2008). For this dimensions, the way of the client evaluate the vendor's responsiveness is based on the intention of vendor to help client to solve

their issues and also the readiness of other backup solution like help desk or call center.

According to Gyueng-Min Kim et al. (2008), assurance is the knowledge and courtesy of employees and their ability to convey trust and confidence. Assurance could be determined by whether the vendor obtained any certification from ASP committee which is able to prove their capability to meet certain requirements set by a third party.

It is difficult to measure service quality due to its intangible characteristic which it depends on how the client feels on the service. The intensive study of service quality in the field of service marketing will impact on the client perspective views on ASP vendors (Yu et al., 2005; Davis, 2005).

### 2.2.5 Perceived Value

Dodds and Monroe (1985) proposed a study on the relationship between the price, perceived value and perceived quality. Perceived value is "frequently conceptualized as involving a consumer's assessment of the ratio of perceived quality and perceived sacrifice" (Zeithami, 1988; Monrea, 1990; Yi-Shun Wang, 2007).

Perceived quality is the level abstraction on a specific attributes of product depends on individual's judgment (Zeithami, 1988). Perceived Sacrifice is influenced by both perceived monetary price and perceived non-monetary price

(Zeithami, 1988). Bolton & Drew (1991) suggested that perceived value is a richer measure of customers' overall evaluation of services.

Perceived value is a combination of "get" and "give" components. The profit a buyer derives from a seller's offering and also the buyer's monetery and non-monetray costs of acquiring the product or service are good to define the perceived value (Parasuraman et al., 1991; Yi-Shun Wang, 2007).

Perceived value taps a wider range of costs and benefits of ASP which different with user satisfaction. User satisfaction is conceptualized as an affective variable based on user feeling (Oliver, 1996; Yi-Shun Wang, 2007), while perceived value is measured as a cognitive construct on overall product or service attribute (Patterson & Spreng, 1997; Yi-Shun Wang, 2007). Both variables only applied to post-use situation where a customer having a first hand experience with ASP is not able to form value and satisfaction evaluations.

### 2.2.6 User satisfaction

User satisfaction may be defined as "a positive affective state resulting from the appraisal of all aspects of a firm's working relationship with another firm" (Anderson and Narus, 1990; Heeseok Lee et al., 2007). User satisfaction has been widely used for measuring the success of the IS because user satisfaction has been used as the indicator to show the degree of user satisfaction on a system (DeLone & McLean, 1992; Pitt et al., 1995; Seddon, 1997; Rai et al., 2002).

From Fornell et al. (1996) study, the ACSI (American Customer Satisfaction Index) model demonstrated that "Customer satisfaction is more quality-driven than value- or price-driven" (Kuo, 2009). Parasuraman et al. (1988) and Boulding et al. (1993) have different definition on user satisfaction whereby is a transaction-specific perspective or cumulative perspective. Parasuraman et al. (1988) argued that the cumulative perspective is more capable of evaluating the firm performance and effectively predict the customer post-purchase behavior (Wang et al., 2004, Kuo, 2009). On the other hand, transaction-specific perspective is based on the customer recent purchase experiences (Boulding et al., 1993; Kuo, 2009).

There are positive relationships between the ASP's quality and the user satisfaction according to previous studies (Qing Xiong Ma et al., 2005; Yi-Shun Wang, 2007, Gyeung-Min Kim et al., 2008). User satisfaction plays a key role in raising customer repurchase intention and customer retention.

### 2.2.7 Continuous Usage

Continuous usage is the intension of the client to extend the purchase or use the vendor's service or product (Heeseok Lee et al., 2007; Lin et al., 2006). Client satisfaction and perceived value on the vendor's service is the key determinants to do the assessment on the vendor performance.

DeLone and McLean (2003) replaced the use with intention to use as an alternative measure in their model because the multidimensional facets of use potential cause wrong interpretation if adopted use as IS success measure in the context of ASP (Heeseok Lee et al., 2007; Yi-Shun Wang, 2007).